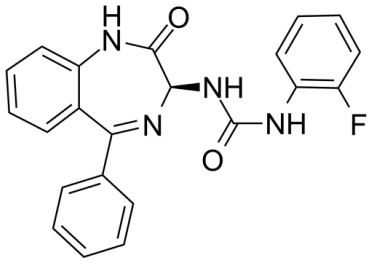
Data Sheet

Product Name:	RSV604
Cat. No.:	CS-4438
CAS No.:	676128-63-5
Molecular Formula:	C22H17FN4O2
Molecular Weight:	388.39
Target:	RSV
Pathway:	Anti-infection
Solubility:	DMSO : 100 mg/mL (257.47 mM; Need ultrasonic)



BIOLOGICAL ACTIVITY:

RSV604 is a novel inhibitor of respiratory syncytial virus replication(EC50=0.86 uM); a putative RSV nucleoprotein(N) inhibitor in phase 2 clinical trials. IC50 value: 0.86 uM(EC50) [1] Target: RSV inhibitor RSV604, a novel benzodiazepine with submicromolar anti-RSV activity. It proved to be equipotent against all clinical isolates tested of both the A and B subtypes of the virus. The compound has a low rate of in vitro resistance development. Sequencing revealed that the resistant virus had mutations within the nucleocapsid protein. This is a novel mechanism of action for anti-RSV compounds. In a three-dimensional human airway epithelial cell model, RSV604 was able to pass from the basolateral side of the epithelium effectively to inhibit virus replication after mucosal inoculation. RSV604, which is currently in phase II clinical trials, represents the first in a new class of RSV inhibitors and may have significant potential for the effective treatment of RSV disease.

PROTOCOL (Extracted from published papers and Only for reference)

Antiviral assays [2] Vero cells were used for the primary screen of 20,000 compounds, and HEp-2 cells were used for all subsequent work. Plates (96-well) were seeded with 4 × 103 cells per well in Dulbecco's modified Eagle's medium (DMEM) containing 10% fetal bovine serum (FBS). Cells were infected the next day with sufficient RSV (RSS strain) to produce an approximately 80% cytopathic effect after 6 days. Cells were incubated during this period in the presence or absence of serial dilutions of compounds. The viability of cells was assessed after 6 days by using XTT. Only living cells can reduce the tetrazolium salts into colored formazan products. Results were expressed as 50% effective concentrations (EC50s) or 50% cell cytotoxicity (CC50) values. Compounds were tested at an initial concentration of 10 μM and contained a concentration of 0.5% dimethyl sulfoxide (DMSO). To measure the growth inhibitory effects of compounds on cells, a cell control (no virus) assay was performed in parallel.

References:

[1]. Henderson EA, et al. 1,4-benzodiazepines as inhibitors of respiratory syncytial virus. The identification of a clinical candidate. J Med Chem. 2007 Apr 5;50(7):1685-92.

[2]. Chapman J, et al. RSV604, a novel inhibitor of respiratory syncytial virus replication. Antimicrob Agents Chemother. 2007 Sep;51(9):3346-53.

[3]. Challa S, et al. Mechanism of action for respiratory syncytial virus inhibitor RSV604. Antimicrob Agents Chemother. 2015 Feb;59(2):1080-7.

CAIndexNames:

Urea, N-[(3S)-2,3-dihydro-2-oxo-5-phenyl-1H-1,4-benzodiazepin-3-yl]-N'-(2-fluorophenyl)-

SMILES:

O=C1[C@@H](NC(NC2=C(F)C=CC=C2)=O)N=C(C3=CC=CC=C3)C4=CC=CC=C4N1

Caution: Product has not been fully validated for medical applications. For research use only.

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